Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form

1. Applying for (select one):

☐ (a) Prop 13 Urban Water Conservation Capital Outlay Grant

☒ (b) Prop 13 Agricultural Water Conservation Capital Outlay Feasibility Study Grant

☐ (c) DWR Water Use Efficiency Project

2. Principal applicant (Organization or affiliation): Placer County Water Agency

3. Project Title: Canal and Reservoir Efficiency Feasibility Study

4. Person authorized to sign and submit proposal:

Name, title	David Breninger
Mailing address	P. O. Box 6570. Auburn, California 95604
Telephone	530-823-4864
Fax.	530-823-4884
E-mail	DBreninger@pcwa.net

5. Contact person (if different):

Name, title.	Mike Nichol
Mailing address.	P. O. Box 6570. Auburn, California 95604
Telephone	530-823-4864
Fax.	530-823-4884
E-mail	MNichol@pcwa.net

6. Funds requested (dollar amount): 100,000

7. Applicant funds pledged (dollar amount): 100,000

8. Total project costs (dollar amount): 200,000

9. Estimated total quantifiable project benefits (dollar amount): (See Section D-3 and D-4)

Percentage of benefit to be accrued by applicant: (See Section D-3 and D-4)

Percentage of benefit to be accrued by CALFED or others: (See Section D-3 and D-4)

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form (continued)

10. Estimated annual amount of water to be saved (acre-feet): 7,000-14,000

    Estimated total amount of water to be saved (acre-feet):

    Over 20 years 140,000-280,000

    Estimated benefits to be realized in terms of water quality, instream flow, other: Increase Use Efficiency

11. Duration of project (month/year to month/year): October/2002 to March/2005

12. State Assembly District where the project is to be conducted: 4

13. State Senate District where the project is to be conducted: 1

14. Congressional district(s) where the project is to be conducted: 4

15. County where the project is to be conducted: Placer County

16. Date most recent Urban Water Management Plan submitted to the Department of Water Resources: December 2000

17. Type of applicant (select one):
    Prop 13 Urban Grants and Prop 13 Agricultural Feasibility Study Grants:
    - ☐ (a) city
    - ☐ (b) county
    - ☐ (c) city and county
    - ☐ (d) joint power authority
    - ☒ (e) other political subdivision of the State, including public water district
    - ☐ (f) incorporated mutual water company

    DWR WUE Projects: the above entities (a) through (f) or:
    - ☐ (g) investor-owned utility
    - ☐ (h) non-profit organization
    - ☐ (i) tribe
    - ☐ (j) university
    - ☐ (k) state agency
    - ☐ (l) federal agency

18. Project focus:
    - ☒ (a) agricultural
    - ☐ (b) urban

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form (continued)

19. Project type (select one):
Prop 13 Urban Grant or Prop 13 Agricultural Feasibility Study Grant capital outlay project related to:

- ☐ (a) implementation of Urban Best Management Practices
- ☒ (b) implementation of Agricultural Efficient Water Management Practices
- ☐ (c) implementation of Quantifiable Objectives (include QO number(s)

.....

- ☐ (d) other (specify)

.....

DWR WUE Project related to:

- ☐ (e) implementation of Urban Best Management Practices
- ☐ (f) implementation of Agricultural Efficient Water Management Practices
- ☐ (g) implementation of Quantifiable Objectives (include QO number(s))
- ☐ (h) innovative projects (initial investigation of new technologies, methodologies, approaches, or institutional frameworks)
- ☐ (i) research or pilot projects
- ☐ (j) education or public information programs
- ☐ (k) other (specify)

.....

20. Do the actions in this proposal involve physical changes in land use, or potential future changes in land use?

- ☐ (a) yes
- ☒ (b) no

If yes, the applicant must complete the CALFED PSP Land Use Checklist found at http://calfed.water.ca.gov/environmental_docs.html and submit it with the proposal.

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One
B. Signature Page

By signing below, the official declares the following:

The truthfulness of all representations in the proposal;

The individual signing the form is authorized to submit the proposal on behalf of the applicant; and

The individual signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant.

Signature _____ Date Feb 20 2002

David A. Breninger
General Manager
Placer County Water Agency

PROPOSAL PART TWO

This section includes a brief project summary and discusses the relevance, importance, technical/scientific merit, feasibility, qualifications, and benefits and costs of the proposed project.

PROJECT SUMMARY

This project will fund studies to evaluate the feasibility and cost effectiveness of potential capital outlay projects to improve water use efficiency. This grant application consists of one project with three studies (tasks) to evaluate the feasibility of increasing water use efficiency by optimizing canal releases, evaluating infiltration through unlined canals, and reducing canal spills. The three tasks are: 1) Efficiency Improvement Study: Telemetry at Multi-Agency Delivery Point. 2) Canal Lining Feasibility Study: Water Losses of Lined and Unlined Canals, and 3) Utilization of Reservoir Storage to Increase System Efficiency. This project is consistent with four of the Agricultural Efficient Water Management Practices (B5, B6, B9, and C1).

PCWA has approximately 165 miles of canals, the majority of which are unlined resulting in water losses. The source of water to these canals are several reservoirs that release water upon demand for downstream customers. These canals experience water losses due to a combination of several factors including transport losses (missing diverted water which flows through its service area), spills, and infiltration through leaks. The three feasibility studies propose to evaluate cost-effective methods to prevent or reduce water losses by better controls, monitoring, and lining. The objective of each feasibility study is to determine the water cost savings if the proposed projects were implemented.

Task 1. PCWA and South Sutter Water District (SSWD) purchases water from PG&E and Nevada Irrigation District which delivers water into the Auburn Ravine at several points. Due to contractual requirements with PG&E, the lag time between the actual request and the delivery of water varies widely and can only be measured manually. The uncertainty when the water delivery actually meets the buy point many times results in a loss of water. PCWA proposes to study the feasibility of reducing water loss through installing telemetry to better measure and control canal flows and deliveries.

Task 2. PCWA is currently conducting a program (2001 CALFED grant) to line canal locations where a high leakage rate exists. To better quantify the results of the 2001 CALFED grant project and apply them to future lining projects, PCWA proposes a more detailed study to determine infiltration rates in lined and unlined canals of various sizes over one hydrologic cycle. Results of the feasibility study would prioritize lining efforts and funding opportunities and quantify results of the 2001 CALFED grant.

Task 3. As part of the 2001 CALFED grant, PCWA will be installing telemetry systems at the ends of two large canals to provide usable and timely information on supply and demand deliveries to the canals to avoid daily spills of unused water supplies. Currently, neither canal has telemetry capability. This data will then be used to determine if expanding the telemetry system to the outlet gates of each reservoir and automating the releases would reduce spills.

The project cost is **$200,000**. This grant application is requesting **$100,000** and PCWA is committed to provide **$100,000** in matching funds. It is anticipated that the feasibility studies proposed in this application could lead to approximately 7,000 to 14,000 ac-ft per year of water savings.

A. SCOPE OF WORK: RELEVANCE AND IMPORTANCE

This section describes the nature, scope, and objectives of the project. It also includes a statement of critical local, regional, Bay-Delta, State and federal water issues and a description of how this project is consistent with local and regional water management plans and other resource management plans.

A.1 Nature, Scope, and Objectives of the Project

The efficient use of California's limited water supplies is a critical local, regional, and statewide water issue. PCWA has approximately 165 miles of canals, the majority of which are unlined resulting in water losses. The source of water to these canals are several reservoirs that release water upon demand for downstream customers. Water losses result from a combination of several factors including transport losses (unused diverted water which flows through its service area), spills, and infiltration through canal leaks. The three feasibility studies propose to evaluate cost-effective methods to prevent or reduce water losses by better controls, monitoring, and lining. The objective of each feasibility study is to determine cost and water savings if proposed projects were implemented. Figure 1 depicts the location of the five zones served by PCWA. Figure 2 depicts the three feasibility study locations.

The scope of each task consists of evaluating a method of canal modernization to determine if water savings is feasible with project implementation. The three tasks are described below.

Task 1. Efficiency Improvement Study: Telemetry at Multi-Agency Delivery Point. Nevada Irrigation District (NID) and PG&E delivers water into the Auburn Ravine in Placer County at several points. This water is purchased from PG&E and NID by Placer County Water Agency (PCWA) and South Sutter Water District (SSWD) for use within each of the entities areas of service. This water changes hands at a point immediately to the west of Highway 65 south of Lincoln. Currently there is a chart recorder installed each irrigation season that is utilized to track water deliveries.

The large geographic area between the sources of supply and the customers' demands equates to a time lag between when deliveries must be requested and when water arrives. The contracts for water require a 48-hour lead time for changes in deliveries. Because of the large geographic area involved and the ability to make deliveries to the Auburn Ravine at several locations, the travel time of water from when it requested to when it arrives varies widely. The only way that SSWD/PCWA/NID know when a change in delivery amount has reached the Highway 65 buy point is to have personnel manually check the site to see a change in flows. Once this water is known to reach the buy point, then SSWD can make changes in their turnouts to utilize this water. Typically there is a lag between when water arrives at a buy point and when adjustments are made to flows to utilize this water.

In 2000, PCWA delivered 16,818.8 acre feet for agricultural customers located to the west of Lincoln. Of this water, 13,618.1 acre feet were actually delivered to customers, and 3,200.7 ac-ft (19%) was lost in transport.

In 2001, PCWA delivered 12,441.38 ac-ft for these customers, and delivered 10,519.5 ac-ft, with losses of 1,921.88 ac-ft (15%).

The purpose of this task is to study the feasibility of installing telemetry at the point on the Auburn Ravine where the water changes ownership from PG&E and NID to SSWD and PCWA. This telemetry would enable any of the three entities involved to see the status of water at the buy point. The objective is to see if 1,000 ac-ft to 3,000 ac-ft of water savings per year is feasible.

Task 2. Canal Lining Feasibility Study: Water Losses of Lined and Unlined Canals. Placer County Water Agency has been spending significant funding to increase the efficiency of its 165 mile canal system. A substantial part of these efficiency improvement efforts is a gunite program used to line areas of the canal where a high leakage rate is found to exist. In 2001, PCWA received a matching grant to fund additional efficiency gains. The part of the grant dedicated to efficiency gains through guniting was for a total amount of $800,000. Part of this study includes a report which will show gains in efficiency as a result of the guniting efforts. This study will rely upon canal delivery and customer use records.

This task would perform a more detailed study to better quantify the benefits of canal lining in PCWA's existing canal system. The study would include the determination of infiltration rates in lined and unlined canals of various sizes, over a one year period of time.

Task 3. Utilization of Reservoir Storage to Increase System Efficiency. Placer County Water Agency has been spending significant funding to increase the efficiency of its 165 mile canal system. In 2001, the Agency received a CALFED matching grant to fund additional efficiency gains. Part of this grant will enable PCWA to install telemetry at the ends of the larger canals to provide more usable and more timely information on water that is lost to the system.

Upstream of the telemetry point at the end of the Antelope Canal is PCWA's Clover Valley Reservoir, and upstream of the telemetry point at the end of the Boardman Canal is PCWA's Mammoth Reservoir. Neither reservoir currently has telemetry associated with it.

Currently PCWA delivers water into the canal system to match the maximum anticipated customer demand. An attempt is made to minimize water lost due to spilling at the end of the canals while at the same time attempting to keep enough water in the canals to meet customer's needs. On any one day, there is a wide variance between customer's demands, which equates to water spilling for part of each day.

Figure 1. Location Map

Figure 2. Facility Location Map

This task will determine if water savings can be attained by:

1. Installing a telemetry controlled outlet gate at both reservoirs which would be tied into the telemetry system.
2. Installing reservoir level sensors into the existing telemetry system.
3. Utilizing data from the points at the ends of the Antelope and Boardman canals which will show when demand increases and decreases on a daily and weekly basis.
4. Programming automated releases into the above described system so that outflows from the reservoir would better match customer demand.
5. Projecting what water savings would be if this system were constructed.

A.2 Statement of Issues, Project Need, and Project Consistency

The efficient use of California's limited water supplies is a critical local, regional, and statewide water issue. PCWA utilizes surface water from the Yuba River, American River, and the Bear River as part of its water supply. The purpose of this project is to evaluate water use efficiency by automating canal control systems, canal infiltration rates, and canal lining methods. This project will provide benefit to the Bay-Delta by ensuring that water diverted upstream is used efficiently.

PCWA is a stakeholder in three major water management teams: Sacramento Area Water Forum (Water Forum), the American River Basin Cooperating Agencies (ARBCA), and the Sacramento Regional Water Authority (RWA). This project is consistent with regional water management plans such as the ARBCA Regional Water Master Plan (RWMP) and Water Forum Agreement.

PCWA is a member of the Water Forum. In the year 2000, the Water Forum finalized the *Water Forum Agreement* (Agreement) which contains seven major elements to meet its objectives. Water conservation is the fifth major element in the Agreement. The water conservation portion of the Agreement describes each water purveyor's commitments to implement Best Management Practices (BMPs). These BMPs were derived from the original MOU developed by the CUWCC, and then customized for the Water Forum conservation agreements prepared for the individual purveyors. These Water Forum BMPs do not address agricultural efficient water management practices.

This project involves the implementation of conditionally applicable efficient water management practices (EWMP) (Appendix A) List B, number 5, *Line or pipe ditches and canals*, List B, number 6, *Increase flexibility in water ordering by, and delivery to, the water users within operation limits*, and List B, number 9, *Automate canal structures,* and List C, number 1, *Water measurement.* The unpredictable water supply and ever increasing demand on California's complex water resources have resulted in a coordinated effort by the California Department of Water Resources (DWR), agricultural water suppliers, farmers, the academic community, environmental organizations, and other interested groups to review and evaluate potential EWMPs and to determine which were feasible to achieve water conservation. This consensus-building effort resulted in the Memorandum of Understanding, which formalizes an agreement to implement these EWMPs and makes a cooperative effort to reduce the consumption of California's water resources.

This project is compatible with PCWA's 2000 UWMP (Brown and Caldwell, Urban Water Management Plan, 2000) and PCWA's ongoing efforts to achieve greater water use efficiency. PCWA's Board of Directors recognizes the importance of water management and conservation

programs. PCWA's adopted rules and regulations include the general policy of the water system that states in part that the PCWA will operate and maintain the water system in an efficient and economical manner and distribute and supply water as fairly and equitably as possible.

In August 1999, PCWA requested assistance from the California Department of Water Resources (DWR's) Water Use Efficiency Office to assess water efficiency opportunities in Zone 1. The February 2000 DWR study recommended that PCWA give attention to the 16% unaccounted for water in Zone 1 and install a real time canal flow monitoring system. The study states that installing flow measurement stations on raw water canals and telemetering the information to a central location would allow faster response to and reduce spill situations and accurately record actual flows leaving the raw water distribution system. This project will evaluate the feasibility of expanding the planned installation of telemetry systems. The project proposed for funding with this application is an integral step in implementing this recommendation and will provide a basis for implementation to realize actual water savings.

B. SCOPE OF WORK: TECHNICAL/SCIENTIFIC MERIT, FEASIBILITY, MONITORING AND ASSESSMENT

This section describes the methods, procedures and facilities associated with the project. A task list and schedule and quarterly expenditure of the project are also included in this section.

B.1 Methods, Procedures, and Facilities

The PCWA will use standard engineering and rate structure methods to implement this project. PCWA will use a combination of in-house staff and outside consultants to collect, store, and evaluate data, and prepare reports. All planning, design and engineering will be performed with in-house and with outside consultants. Where required, PCWA will acquire encroachment permits. This project does not require construction activities nor does it require the purchase of land or easements.

For each project, PCWA assigns an engineer to serve as a project engineer/manager. The project manager is responsible for the overall conduct of the project. This includes assuring that a work plan is prepared, data is collected properly, and assuring the project is progressing.

Task 1. Efficiency Improvement Study: Telemetry at Multi-Agency Delivery Point

This task would evaluate the feasibility of installing telemetry. The appropriate equipment for recording flow data and transmitting this data to the base station will be evaluated. Factors that will be considered are power source, method transmitting data, and if an antenna is necessary to transmit the data, where this antenna could be situated.

Task 2. Canal Lining Feasibility Study: Water Losses of Lined and Unlined Canals

This task will include the determination of water infiltration sites of both lined and unlined canals of different sizes. Infiltration tests will be conducted at these chosen locations every month for 12 months. Factors such as the type of infiltration test method, size of canal, flow in the canal, precipitation, evaporation rates, soil type, topography, and other visual observations of each site will

be monitored. These data will be evaluated to determine the rate of water loss in unlined and lined canal systems. Results of the study will be used to prioritize future canal lining projects and improve the quantification of data available as a result of the CALFED 2001 grant funding.

Task 3. Utilization of Reservoir Storage to Increase System Efficiency Study

This task will include utilizing data from the points at the ends of the Antelope and Boardman Canals which will show when demand increases and decreases on a daily and weekly basis. This data will then be used to determine if expanding the telemetry system to the outlet gates of each reservoir and automating the releases would reduce spills. The results of the study would assist in quantification of water savings, determine the equipment necessary to expand the telemetry system, and provide backup documentation for future funding opportunities.

B.2 Task List and Schedule

The tasks for implementation of this project and the project schedule are described below and presented on Figure 3. The schedule includes deliverable items, due dates, and projected costs for each task. The schedule bar chart also identifies which tasks are considered to be inseparable if only a portion of the project is funded. Table B-1 presents a quarterly expenditure projection.

Figure 3. Project Timeline

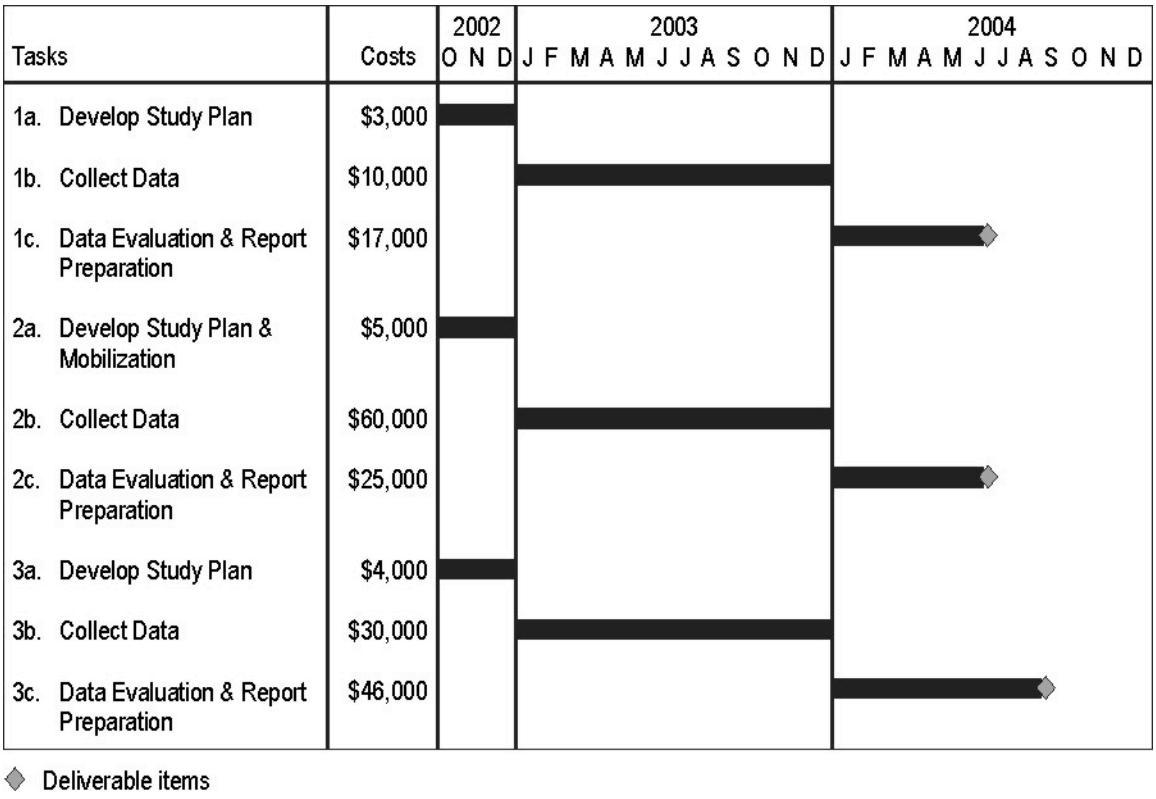

Table B-1. Quarterly Expenditure Projection

Quarter	Months	Expenditure
2002		
4	October-December	12,000
2003		
1	January-March	25,000
2	April-June	25,000
3	July-September	25,000
4	October-December	25,000
2004		
1	January-March	36,300
2	April-June	36,300
3	July-September	15,400
4	October-December	0
Total		$200,000

C. QUALIFICATIONS OF THE APPLICANTS AND COOPERATORS

The qualifications of the project manager, cooperators, and partners to be involved in the real-time flow monitoring program for Placer County Water Agency (PCWA) are discussed in this section.

C.1 Resumes

The project manager responsible for the water system audit, leak detection, and leak repair program will be Mike Nichol, the Director of Field Operations. Mr. Nichol's resume is included in Appendix B. Mr. Nichol has 13 years of experience with the PCWA water distribution system .

C.2 External Cooperators

No external cooperators will be utilized for this project.

D. BENEFITS AND COSTS

This section includes a breakdown and justification of the project budget and cost sharing information. Also described and analyzed are the benefits and costs of this project.

D.1 Budget Breakdown and Justification

Table D-1 presents a detailed estimated budget that includes relevant line items for capital outlay project proposals and justification of each line item. This table also indicates the amount of cost sharing for each element.

Table D-1. Detailed Budget – Capital Outlay Project Proposal

Description	Hours	Unit price ($) [1]	Total ($)	Total ($)
TASK 1: Efficiency Improvement Study: Telemetry at Multi-Agency Buy Point				
Task 1a. Prepare Study Plan				
Gather information, determine telemetry system data format, prepare work plan				
Water Use Efficiency Manager	18	$43.00	$774.00	
Project Manager	9	$39.00	$351.00	
Project Engineer	28	$29.00	$812.00	
Staff Engineer	0	$24.00	$0.00	
Field Technician	0	$20.00	$0.00	
Consultant	8	$120.00	$960.00	
Subtotal Labor:	63		$2,897.00	
Equipment/Expense Costs				
Phone, Photocopies, Office supplies, mileage, computer.		$103.00	$103.00	
Travel		$0.00	$0.00	
Subtotal Equipment/Expenses:			$103.00	
Subtotal Task 1a:			**$3,000.00**	**$3,000.00**
Task 1b. Collect Data				
Project kick-off meeting, monthly status meetings, data management, data collection, project control, multi-agency coordination and communication.				
Water Use Efficiency Manager	40	$43.00	$1,720.00	
Project Manager	40	$39.00	$1,560.00	
Project Engineer	40	$29.00	$1,160.00	
Staff Engineer	40	$24.00	$960.00	
Field Technician	120	$20.00	$2,400.00	
Consultant	0	$120.00	$0.00	
Subtotal Labor:	280		$7,800.00	
Equipment/Expense Costs				
Phone, Photocopies, Office supplies, mileage, computer.		$2,200.00	$2,200.00	
Travel		$0.00	$0.00	
Subtotal Equipment/Expenses:			$2,200.00	
Subtotal Task 1b:			**$10,000.00**	**$10,000.00**
Task 1c. Prepare Report				
Evaluate data and prepare report. Consultant will assist with data evaluation and report preparation. Estimate one meeting with consultant.				
Water Use Efficiency Manager	40	$43.00	$1,720.00	
Project Manager	32	$39.00	$1,248.00	
Project Engineer	90	$29.00	$2,610.00	
Staff Engineer	80	$24.00	$1,920.00	
Field Technician	0	$20.00	$0.00	
Consultant	72	$120.00	$8,640.00	
Subtotal Labor:	314		$16,138.00	
Equipment/Expense Costs				
Phone, Photocopies, Office supplies, mileage, computer.		$862.00	$862.00	
Travel		$0.00	$0.00	
Subtotal Equipment/Expenses:			$862.00	
Subtotal Task 1c:			**$17,000.00**	**$17,000.00**
TOTAL TASK 1:				**$30,000.00**

Table D-1. Detailed Budget – Capital Outlay Project Proposal (continued)

Task 2. Water Loss Study of Lined and Unlined Canals				
Task 2a. Prepare Study Plan				
Determine canals to be monitored, determine infiltration methods and approach, determine data collection procedures and prepare work plan.				
Water Use Efficiency Manager	18	$43.00	$774.00	
Project Manager	4	$39.00	$156.00	
Project Engineer	4	$29.00	$116.00	
Staff Engineer	0	$24.00	$0.00	
Field Technician	0	$20.00	$0.00	
Consultant	32	$120.00	$3,840.00	
Subtotal Labor:	58		$4,886.00	
Equipment/Expense Costs				
Phone, Photocopies, Office supplies, mileage, computer.		$114.00	$114.00	
Travel		$0.00	$0.00	
Subtotal Equipment/Expenses:			$114.00	
Subtotal Task 2a:			**$5,000.00**	**$5,000.00**
Task 2b. Collect Data				
Project kick-off meeting, monthly status meetings, data management, data collection, project control.				
Water Use Efficiency Manager	80	$43.00	$3,440.00	
Project Manager	120	$39.00	$4,680.00	
Project Engineer	148	$29.00	$4,292.00	
Staff Engineer	120	$24.00	$2,880.00	
Field Technician	240	$20.00	$4,800.00	
Consultant	250	$120.00	$30,000.00	
Subtotal Labor:	958		$50,092.00	
Equipment/Expense Costs				
Phone, Photocopies, Office supplies, mileage, computer.		$9,908.00	$9,908.00	
Travel		$0.00	$0.00	
Subtotal Equipment/Expenses:			$9,908.00	
Subtotal Task 2b:			**$60,000.00**	**$60,000.00**
Task 2c. Prepare Report				
Evaluate data and prepare report. Consultant will lead with data evaluation and report preparation. Estimate at least 4 meetings with consultant.				
Water Use Efficiency Manager	40	$43.00	$1,720.00	
Project Manager	20	$39.00	$780.00	
Project Engineer	80	$29.00	$2,320.00	
Staff Engineer	0	$24.00	$0.00	
Field Technician	0	$20.00	$0.00	
Consultant	150	$120.00	$18,000.00	
Subtotal Labor:	290		$22,820.00	
Equipment/Expense Costs				
Phone, Photocopies, Office supplies, mileage, computer.		$2,180.00	$2,180.00	
Travel		$0.00	$0.00	
Subtotal Equipment/Expenses:			$2,180.00	
Subtotal Task 2c:			**$25,000.00**	**$25,000.00**
TOTAL TASK 2:				**$90,000.00**

Table D-1. Detailed Budget – Capital Outlay Project Proposal (continued)

Task 3. Utilization of Reservoir Storage to Increase System Efficiency Study				
Task 3a. Prepare Study Plan				
Determine telemetry system capabilities, project approach, determine determine data collection procedures and prepare work plan.				
Water Use Efficiency Manager	6	$43.00	$258.00	
Project Manager	4	$39.00	$156.00	
Project Engineer	4	$29.00	$116.00	
Staff Engineer	0	$24.00	$0.00	
Field Technician	0	$20.00	$0.00	
Consultant	28	$120.00	$3,360.00	
Subtotal Labor:	42		$3,890.00	
Equipment/Expense Costs				
Phone, Photocopies, Office supplies, mileage, computer.		$110.00	$110.00	
Travel		$0.00	$0.00	
Subtotal Equipment/Expenses:			$110.00	
Subtotal Task 3a:			**$4,000.00**	**$4,000.00**
Task 3b. Collect Data				
Project kick-off meeting, monthly status meetings, data management, data collection, project control. Consultant to take lead in data collection and data management.				
Water Use Efficiency Manager	40	$43.00	$1,720.00	
Project Manager	24	$39.00	$936.00	
Project Engineer	40	$29.00	$1,160.00	
Staff Engineer	80	$24.00	$1,920.00	
Field Technician	150	$20.00	$3,000.00	
Consultant	140	$120.00	$16,800.00	
Subtotal Labor:	474		$25,536.00	
Equipment/Expense Costs				
Phone, Photocopies, Office supplies, mileage, computer.		$4,464.00	$4,464.00	
Travel		$0.00	$0.00	
Subtotal Equipment/Expenses:			$4,464.00	
Subtotal Task 3b:			**$30,000.00**	**$30,000.00**
Task 3c. Prepare Report				
Evaluate data and prepare report. Consultant will lead data evaluation and report preparation. Budget at least 4 meetings.				
Water Use Efficiency Manager	160	$43.00	$6,880.00	
Project Manager	38	$39.00	$1,482.00	
Project Engineer	200	$29.00	$5,800.00	
Staff Engineer	120	$24.00	$2,880.00	
Field Technician	40	$20.00	$800.00	
Consultant	200	$120.00	$24,000.00	
Subtotal Labor:	758		$41,842.00	
Equipment/Expense Costs				
Phone, Photocopies, Office supplies, mileage, computer.		$4,158.00	$4,158.00	
Travel		$0.00	$0.00	
Subtotal Equipment/Expenses:			$4,158.00	
TOTAL HOURS	3237			
Subtotal Task 3c:			**$46,000.00**	**$46,000.00**
TOTAL TASK 3:				**$80,000.00**
TOTAL ESTIMATED PROJECT COSTS:				**$200,000.00**

(1) Unit price for PCWA employees include salary cost and 35 percent overhead rate. Consultant unit price is average hourly rate of qualified engineering consulting firm.

D.2 Cost Sharing

PCWA is requesting **50 percent** or **$100,000** in funding with the Proposition 13 Agricultural Water Conservation Capital Outlay Feasibility Study Grant. PCWA will cost share the remaining **$100,000** or **50 percent** of the total costs.

There are no additional funding commitments or cost sharing agreements for this project.

D.3 Potential Benefits to be Realized and Information to be Gained

The primary benefit to be gained from all three tasks is reduced water loss by better monitoring and control of water deliveries, and optimal lining of canals.

PCWA water use is approximately 114,000 ac-ft/yr. There is 30% (34,200 ac-ft/yr) unaccounted-for water in the canal system (MBK Engineers, Customer Water Use Study. November, 2000.) It is assumed that 5% unaccounted-for water is due to evaporation losses and cannot be reduced by this project. It is assumed that the remaining unaccounted-for water (28,500 ac-ft/yr) is a result of water losses from unmonitored water deliveries and from unlined canals. Assuming that this project could define feasible capital improvements to address 25% to 50% of this water loss, this project has the potential to result in 7,000 to 14,000 ac-ft/yr of water savings. These water savings would reduce the amount of surface water diversions that would otherwise occur, provide greater instream flows, improve instream water quality, and improve water supply reliability by delivering the same amount of water to customers while also reducing the amount of diversion flow needed.

Each of the tasks provides specific benefits and information, as described below.

Specifically, the main benefits of Task 1 would:

- Allow the entities involved to know when water arrives at the Highway 65 buy point, and could therefore respond more quickly to put this water to beneficial use.
- Decrease the amount of water that is lost in transport, which would increase the efficiency of water deliveries.

Specifically for Task 2, the benefits of the study would:

- Prioritize future PCWA canal lining efforts.
- Improve the quantification of data available as a result of the 2001 CALFED grant.
- Supply valuable information to share with other entities with similar concerns.
- Supply supporting data for future canal improvement funding opportunities.
- Determine potential water cost savings.

Specifically for Task 3, the benefits of the study would:

- Determine the equipment and associated costs for the proposed system.
- Determine the water savings, which could be attained by installation of the proposed telemetry system.

- Supply valuable information to share with other entities with similar concerns.
- Supply supporting data for the proposed system.

D.4 Benefit Realized and Information Gained versus Costs

As stated above, this project could lead to the implementation of capital improvements that could result in 7,000 to 14,000 ac-ft/yr of water savings. The value of conserved raw water to PCWA is $40/ac-ft, which would result in a benefit from PCWA's perspective of $280,000 to $560,000 per year. From the CALFED perspective and an assumed value of water of $160 per ac-ft, the benefit would be $1.1 million to $2.2 million per year. The cost of the improvements needed to realize these water savings are not known at this time, but will be defined in the proposed feasibility study.

E. OUTREACH, COMMUNITY INVOLVEMENT AND ACCEPTANCE

A letter of support from the Regional Water Authority is included in Appendix C.

Because this project provides a regional-wide benefit, outreach efforts will not focus on any particular customer sector. Due to the nature of this project it is neither appropriate nor practical to extend the project to specifically target disadvantaged communities within the County. There are no tribal entities particularly impacted by this project.

Information on the results of this project will be disseminated through the PCWA's public outreach program. PCWA operates an extensive public information program and associated schools program, which provide materials, speakers, and outreach activities to the general public.

Outreach activities will include publications and Web site development, public meetings, PCWA participation at community events, multimedia campaigns, interagency partnerships, corporate environmental fairs, professional trade shows, water conservation workshops and seminars and a speakers bureau.

Summaries of the results and benefits of this project will be developed by PCWA staff and made available to PCWA customers. Information regarding the project will be included in billing mailer inserts, newsletters, and the web sites.

APPENDIX A

EWMP

Efficient Water Management Practices by Agricultural Water Suppliers in California from the Memorandum of Understanding of the Agricultural Water Management Council

Generally Applicable Efficient Water Management Practices

1. Prepare and adopt a Water Management Plan using as a guideline Exhibit B of this Memorandum of Understanding for Agricultural Water Suppliers.
2. Designate a Water Conservation Coordinator.
3. Support the availability of water management services to water users.
4. Where appropriate, improve communication and cooperation among water suppliers, water users, and other agencies.
5. Evaluate the need, if any, for changes in policies of the institutions to which the water supplier is subject.
6. Evaluate and improve efficiencies of water suppliers pumps.

Conditionally Applicable Efficient Water Management Practices

1. Facilitate Alternative Land Use.
2. Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not cause harm to crops or soils.
3. Facilitate the financing of capital improvements for on-farm irrigation systems.
4. Facilitate voluntary water transfers that do not unreasonably affect the water user, water supplier, the environment, or third parties.
5. Line or pipe ditches and canals.
6. Increase flexibility in water ordering by, and delivery to, the water users within operational limits.
7. Construct and operate water supplier spill and tailwater recovery systems.
8. Optimize conjunctive use of surface water and groundwater.
9. Automate canal structures.

Other Efficient Water Management Practices

1. Water measurement and water use report.
2. Pricing or other incentives

APPENDIX B

Resume

Placer County Water Agency

Mike Nichol

Work Experience

Placer County Water Agency - July 1989-Present

Increasing responsibility from Resident Engineer overseeing construction of a 15 mgd water treatment plant expansion and a 10 million gallon water storage tank to Director of Field Services responsible for canal operations and maintenance, treated water pipeline maintenance, warehouse and fleet maintenance. Over 10 years associated with Placer County Water Agency's raw water distribution system.

Guy F. Atkinson - April 1984-July 1989

Increased responsibility from Field Engineer to Project Engineer on dam sites in Utah and California, and a project in Virginia building islands.

Nevada Bureau of Mines and Geology - 1980-1982

Research Assistant performing Earthquake Hazard Mapping around Reno, Nevada.

Education

Master of Science: Geological Engineering from McKay School of Mines, University of Nevada-Reno, 1983.

Master of Business Administration: University of Nevada-Reno, 1983.

Bachelor of Science: Civil Engineering, University of the Pacific, 1980.

Certifications

Registered as a Professional Engineer in the State of California.

State of California Dept of Health Services Grade 4 Water Distribution Operator.

State of California Dept of Health Services Grade 3 Water Treatment Plant Operator.

American Water Works Association Grade 3 Water Distribution Operator.

Miscellaneous

Member of AWWA Water Distribution Operator Certification Committee

APPENDIX C

Letter of Support

Insert letter of support.

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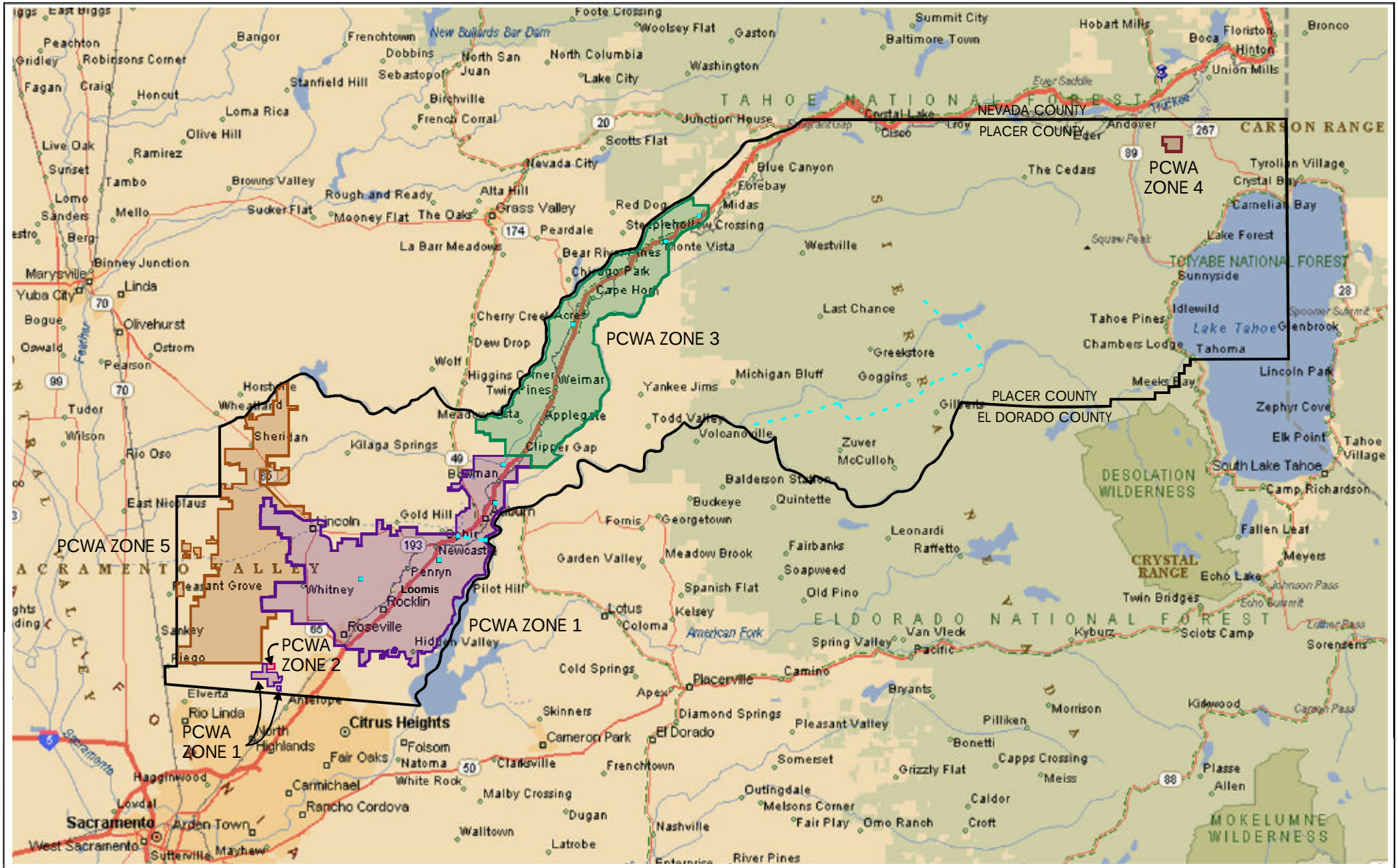
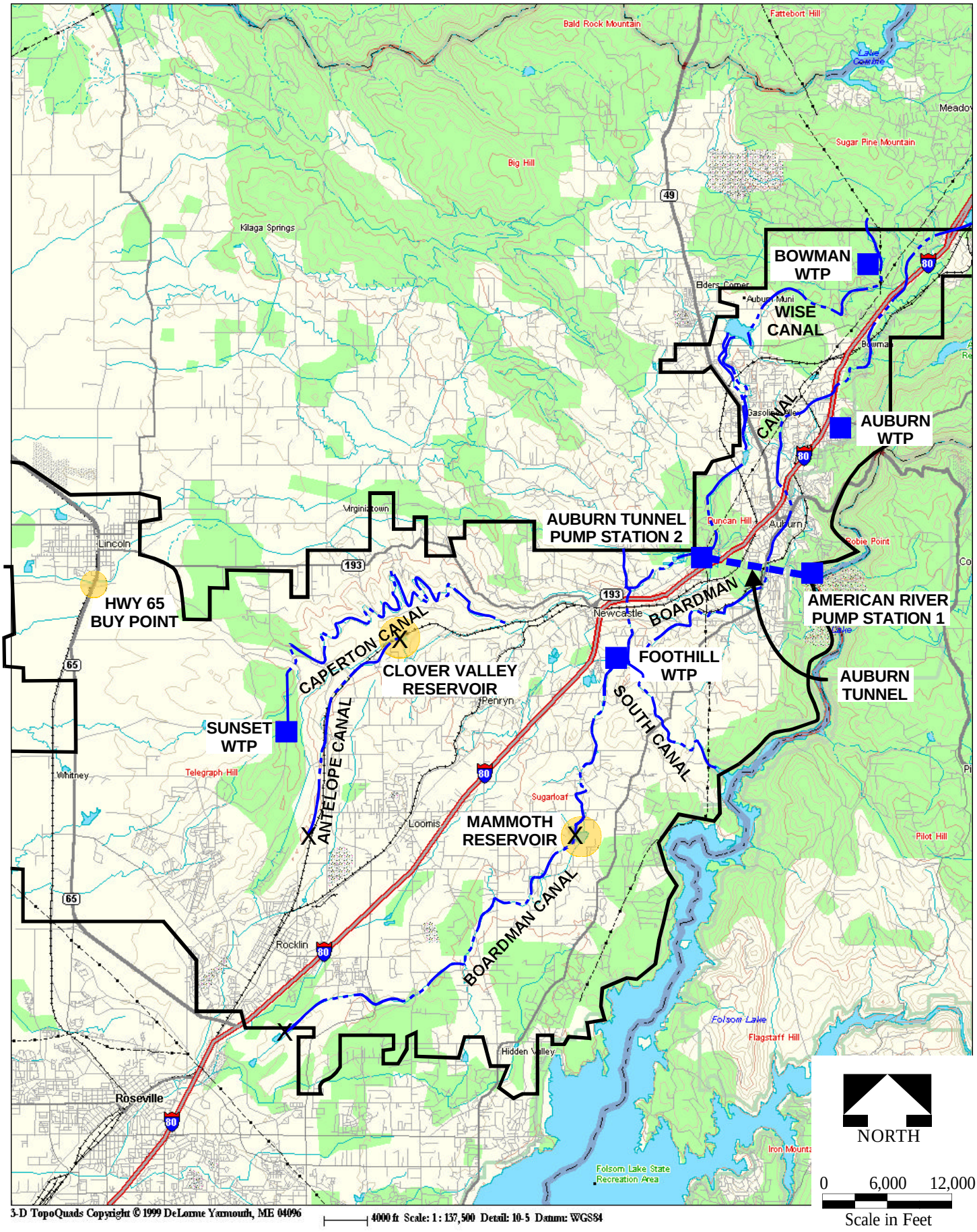


Source: Microsoft Trip Planner 98

NORTH

BROWN AND CALDWELL	DATE 2-22-02	Placer County Water Agency, Auburn, California	FIGURE 1
	PROJECT 20649-003	TITLE Location Map	



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DATE 2-26-02	PROJECT 20649-003	SITE Placer County Water Agency, Auburn, California	FIGURE 2
BROWN AND CALDWELL		TITLE Canal and Reservoir Efficiency Improvement Locations	

Regional Water Authority
Building Alliances in Northern California

Edward Winkler
Executive Director

5620 Birdcage Street
Suite 180
Citrus Heights, CA 95610

Tel: (916) 967-7692
Fax: (916) 967-7322
www.regionalwaterauthority.net

RWA

California Department of Water Resources
Attention: Ms Marsha Prillwitz
Office of Water Use Efficiency
P.O. Box 942836
Sacramento, CA 94236

February 28, 2002

Dear Ms. Prillwitz:

I am writing in support of the Placer County Water Agency's (PCWA) grant proposals to the Department of Water Resources under the 2002 Proposition 13 grant solicitation.

The Regional Water Authority is a joint powers authority of 17 water suppliers serving more than 1.2 million people in the greater Sacramento Region. Our mission is to serve and represent regional water supply interests and assist RWA members with protecting and enhancing the reliability, availability, affordability and quality of water resources. RWA is currently implementing a Regional Water Efficiency Program designed to expand measures to help area water providers fulfill Water Forum and California Urban Water Conservation Council best management practices (BMPs).

PCWA is an active member of the Regional Water Authority and the RWA Regional Water Efficiency Program. We strongly support the PCWA applications entitled "Auburn Leak Repair Project," "Auburn Water Supply Audit, Leak Detection and Repair," and "Canal and Reservoir Efficiency Feasibility Study."

The PCWA proposals further the ability of PCWA to meet their Water Forum Agreement commitments, and are fully compatible with the CALFED water quality, water supply, and environmental restoration objectives.

The Regional Water Authority recommends that the Department of Water Resources fund PCWA's proposals.

Sincerely,

Edward Winkler
Executive Director

cc: Dave Breninger